and may mitigate the effect of BKV infection post-HCT. Further studies are warranted to assess the effect of CMX001 on BKV infection and its association with improved renal function.

381

The Management of Relapsed AML or MDS Following a T-Cell Depleted Allogeneic Stem Cell Transplant

Ewelina Morawa [1], Emily Zabor [2], Molly Maloy [1], Sean Devlin [2], Sergio A. Giralt [1]. [1] Memorial Sloan-Kettering Cancer Center, New York, NY; [2] Department of Biostatistics, Memorial Sloan-Kettering Cancer Center, New York, NY

Background: Relapse is a major cause of treatment failure of allogeneic stem cell transplant (SCT) for AML. Most retrospective analyses describing the natural history of relapse have not included recipients of T-cell depleted transplants (TCD). We hypothesized that response to therapy may be different in recipients of TCD-SCT and that they may be more amenable to graft versus leukemia effects. Thus we performed a retrospective analysis of our patients who relapsed after a TCD-SCT.

Materials and Methods: From 2003 until 2012 we identified 42 patients with AML or MDS who relapsed after a TCD-SCT at MSKCC. Patients were divided into four groups based on management of relapse: supportive care (n=7), chemotherapy only (n=17), chemotherapy plus DLI (n=8), and chemotherapy plus 2nd SCT (n=10). Patient and disease characteristics were compared across the four groups using Fisher's exact test when categorical and the Kruskal-Wallis test when continuous. Kaplan-Meier methods were used to estimate survival probabilities and the log-rank test evaluated differences in survival between groups. Of the 10 patients who underwent a second HSCT, 8 received T-cell replete and 2 underwent another TCD-SCT.

Results: Across groups, there were no significant differences in sex ($P = .086$), donor type (related vs unrelated;$P = .082$), percentage of blasts on relapse (median 25%;$P = .317$), and all cause mortality ($P = .088$). There was a statistically significant difference in the age of patients ($P = .010$); youngest in the chemo plus 2nd SCT group (median 41.5 yrs). The median follow up time amongst survivors was 24.4 months (range, 13.6 - 69.8 m). There were 34 all cause mortality events; 4 due to NRM. Median survival for all groups was 16 months (95% CI, 11.8-27.1). At 12 month follow up, the probability of survival in supportive care, chemo only, chemo plus DLI, and chemo plus 2nd SCT group were 43%, 41%, 88%, and 70%, respectively. There was no statistically significant difference in overall survival (OS) between the groups ($P = .088$). Patients in the chemo plus DLI and chemo plus 2nd SCT groups had the longest median OS of 28.6 months and 20.2 months, respectively. The median survival of patients who received any salvage chemotherapy was 19.3 months (95% CI, 10.5-28.6) compared to 20.2 months (95% CI, 11.9-NA) for those receiving chemo plus 2nd SCT ($P = .180$). Complete remission was achieved at any time in 5 patients in chemo plus 2nd SCT, 3 patients in chemo plus DLI, and none of the patients in chemo only group ($P = .003$). Use of hypomethylating agents versus other salvage chemotherapy at any point in treatment did not improve OS ($P = .745$).

Conclusions: AML patients relapsing after a TCD-SCT can be successfully treated, however long term disease control is rare. Due to the small number of patients we were not able to demonstrate statistically significant difference in outcomes among different salvage strategies.

382

BK Virus by PCR From Peripheral Blood At Day 21 After Allogeneic Transplant Predicts Risk for Hemorrhagic Cystitis

Jaime Anne Hilger Mullin [1], Tatyana Sklyar [2], Sushil Ratnaparkhe [2], Tarik Hadid [1], Gina Berteotti [3], John Lister [3], Entezam Sahovic [3]. [1] Hematology and Oncology, Western Pennsylvania Cancer Institute, Pittsburgh, PA; [2] Internal Medicine, WPAHS, Pittsburgh, PA; [3] Western Pennsylvania Cancer Institute, Pittsburgh, PA

Introduction: Hemorrhagic Cystitis (HC) is a well-recognized complication of hematopoietic stem cell transplantation (HSCT) and is frequently associated with BK virus reactivation. While self-limited, it is associated with significant morbidity. We hypothesized that serum PCR testing for BK virus (BKV) before and after HSCT might predict development of HC. To test our hypothesis, we conducted a retrospective analysis of patients who underwent allogeneic HSCT from 2005 to 2012 at our institution.

Methods: We identified 162 patients who underwent allogeneic HSCT, 124 received myeloablative conditioning (MA) and 38 received reduced intensity conditioning (RIC). The MA regimen consisted of fludarabine 50 mg/m^2/day IV for 5 days and busulfan 3.2 mg/kg/day IV for 4 days with or without total body irradiation (TBI) of 200 cGy/day for 2 days (FB4 or FB4/TBI). The RIC regimen (FB2) consisted of fludarabine 30 mg/m^2/day IV for 5 days and busulfan 3.2 mg/kg/day IV for 2 days. Ninety-six patients received matched unrelated donor HSCT (MUD), 60 received matched related donor (MRD) and 6 received unrelated cord blood (UCB). Serum BKV screening was performed in 70 patients before HSCT and in 63 patients at day +21. Patients with urinary symptoms were tested for BKV in urine by PCR.

Results: Overall 36/162 patients (22%) developed HC. Twenty-six of the 36 (72%) were positive for BKV. The median time to development of HC from transplant was 37 days. The odds of developing HC was 4.2 fold higher in patients receiving MA conditioning as compared to RIC ($P = .01$; 95% CI=1.22-14.69). The severity of HC was not increased with the addition of TBI ($P = .8$). Graft source had no influence on the incidence of HC ($P = .6$). HC developed in 12/23 patients (52%) who were positive for BKV at day +21 and in only 4/40 patients (10%) who were negative. Patients who tested positive for BKV at day +21 were 9.8 times more likely to develop HC than those who tested negative ($P = .0005$; 95% CI =2.63-36.67). Testing at day +21 had a negative predictive value (NPV) of 90% ($p = < .0001$; 95% CI=76-97%).

Conclusion: HSCT using MA conditioning significantly increases the likelihood of developing HC compared to RIC. While pre-HSCT serum testing of BKV had no significant predictive value, testing at day +21 helped identify a cohort of patients at higher risk for development of HC. A clinical trial of antiviral pre-emptive therapy might be warranted for patients who test positive on day +21.

383

Impact of Iron Overload On Immune Function for Patients Undergoing Allogeneic Transplants for Hematologic Disorders: Results of Pilot Study

Seema Naik [1], Ralph D'Agostino Jr. [2], Mary Ann Knovich [3], David Grier [4], Robin Harrelson [5], Linda McPhail [6]. [1] Hematology and Oncology, Wake Forest Baptist Medical Center, Winston